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COVER SHEET

Paper for DISCOURSE STUDIES

Full title of the article: Dealing with numbers – nurses informing doctors and patients about test results

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Abstract: Nurses need to adapt to various interactional situations and design their talk for different recipients. One essential communicative task for nurses is to transmit information on test and measurement results both to the patient and to the physician. This article examines how nurses design their talk on numerical values according to the recipient and the activity. The nurse can deliver the patient information either plainly through numbers or by formulating some type of qualitative description of the value. The data consist of 7.5 hours of video-recorded interaction in a Finnish hospital. Using conversation analysis, we demonstrate how the institutional roles and the ongoing activity sequence affect how nurses formulate their talk. When nurses discuss results with their patients, they typically use qualitative descriptions, whereas when they talk with doctors, the typical turn involves numeric information. It will be demonstrated that nurses construct their professional identity involving both care and medical expertise through their linguistic-interactional choices.

Keywords: conversation analysis, hospital interaction, nursing, numeric information

BIONOTE

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Dealing with numbers – nurses informing doctors and patients about test results

1. Introduction

This paper focuses on professional language use – when nurses discuss their patients' test results – in a range of professional contexts. The aim of the paper is to illustrate that different situational factors, such as the participants' epistemic and deontic positions as well as the task at hand all influence how the action of talking about test results is formulated linguistically. The professional language used by nurses is institutional interaction: it is goal-oriented, it is shaped by certain institutional constraints and it is understood in terms of an institution-specific inferential framework (see Drew and Heritage, 1992). However, institutionality is not (only) a pre-existing category, it is also created by the participants' interactional and lexical choices (see Drew and Heritage, 1992). This paper describes how nurses enact their professional identity through their actions and linguistic conduct concerning one of their essential professional activities.

Nurses who work in hospitals face a variety of interactional situations as part of their daily activities. Our data from a large hospital in Finland feature nurses who are regularly involved in dyadic treatment, care and counselling situations with their patients. In addition to these dyadic conversations, nurses participate in multi-professional multiparty situations, such as ward rounds. Our analysis demonstrates how nurses display their professional competence by modifying their talk within the core activity of transmitting information on different numeric values that relate to a patient's condition, particularly his or her vital signs and laboratory test results.

To monitor vital signs by measuring a patient's blood pressure, pulse, respirations and body temperature is an essential component of nursing care (Rose and Clarke, 2010).

Knowledge, skills and the ability to think critically are required not only to measure vital

signs accurately but also to interpret them in the context of a patient's illness and medical treatment (Cardona-Morrell et al., 2016). The laboratory test results also play a central role in patient care (Boyd et al., 2007). Laboratory values provide healthcare professionals with essential clues regarding a patient's condition and the medical interventions that are needed for the patient's full recovery. As first-line responders to the healthcare needs of patients, nurses are required to be familiar with common laboratory values as well as how to interpret them. Indeed, a nurse's professional competence includes an ability to communicate the values to both the physician and patient expediently.

Both vital signs and most laboratory test results are conveyed through numbers, and the patient's test results can therefore be placed on a numeric scale. Prior research has investigated the different ways to talk about numeric values with patients in the healthcare context especially with respect to communicating risk probabilities (for example, see Adelswärd and Sachs, 1998; Apter et al., 2008; Waters et al., 2014), but also related to, for instance, blood cholesterol levels (Adelswärd and Sachs, 1998), blood pressure values (Svensson et al., 2008), and HIV-related viral load (Moore et al., 2001). Previous research has emphasised the importance of helping patients make sense of numeric values in order to promote patient-centred care and a shared decision-making process (see Apter et al., 2008). While numeric communication has been examined in contexts that involve a medical professional (doctor or nurse) who talks with patients, how medical professionals talk about numeric values to each other (such as a nurse to doctor) has not yet been investigated thoroughly. Such interprofessional teamwork is an important part of patient-centred and holistic care. In teamwork, the challenge for nurses is to bring out their expertise without jeopardising the relations between different professional groups (Arber, 2008). This can lead to a situation where nurses' knowledge is under-represented and their work's value is under-appreciated because of the institutional hierarchy in the hospital (O'Hare, 2008). This paper

sheds light on both situations – nurse-patient encounters and interprofessional situations – and by comparing them shows how the nurses enact their professional expertise related to numeric information with respect to the institutional positions of the participants.

When transmitting information on test results, the nurse can choose between two alternatives. Firstly, the nurse can use numbers and simply provide the recipient with the face value of the reading or the test result. The second option is to put the measured value into context and to offer the patient a more qualitative description of the result. This contextualisation of the face values (Svensson et al., 2008) can be achieved in different ways. For example, the nurse can compare the result to a reference range and describe it in relation to this. Values within the reference range are described as normal, and those that fall outside the reference range are depicted as either high or low. Ultimately, the quantitative scale can be mapped onto an evaluative scale, where high can refer either to good or bad and low is characterised as the reverse (Moore et al., 2001: 434). Another means of contextualising patient test results is when the nurse compares the latest result to the patient's previous values (Svensson et al., 2008). When this occurs, the previous values provide a reference frame for the interpretation of the measured value, and consequently, the nurse describes the measured parameter as having increased or decreased, or as being stable.

In addition to the design of the talk on numeric values, nurses need to display professional competence regarding their evaluation of the newsworthiness of the information, the timing of the information delivery as well as the action that is performed. The talk concerning numbers is often an intrinsic part of the interaction, and the delivery of the information is an activity in itself. Nonetheless, nurses sometimes mention the patient's results even when no talk about the values is underway or expected. In these cases, the mention of the values serves an interactional purpose that is related to the nurse's role with respect to the patient's treatment.

This paper examines nurses' talk on test results in different participation frameworks and different professional situations. The question is when nurses simply inform the recipient of the numeric value, and when they formulate a qualitative description on the basis of the numbers. A pertinent issue is how nurses design their talk according to the recipient (patient versus doctor) and the situation. Furthermore, how does the sequential position of the turn affect its design? This article is divided into two parts: the first consists of an analysis of the dyadic situations between nurses and patients and the second part focuses on the nurse-doctor interaction within the medical team. In both these parts, we examine the variation in how the nurse transmits information regarding numbers within these encounter types.

2. Data and method

The data for this study consist of 7.5 hours of video-recorded naturally-occurring interaction in two wards at a large hospital in Finland. The data include the dyadic interaction between the nurse and the patient (during care and treatment encounters as well as discharge discussions; approximately 4.5 hours), as well as approximately 3 hours of multi-professional ward-round discussions. The medical team in the ward round consists of a (senior) doctor, who is a specialist in the relevant medical domain, a registrar, who is a general physician and is in the process of becoming a specialist in the area, and the nurse(s). Most cases involve two nurses who attend the round: the nurse who is assigned to that particular patient, and the charge nurse who organises the nurses' work on that ward.¹ For our data, a research permit

¹ The data have been collected as part of a project funded by the Kone foundation. The project aims at providing knowledge on the professional language used at the workplace in order to increase language awareness at the workplace and nursing education (<https://www.helsinki.fi/en/researchgroups/suomen-kielen-tilanteinen-oppiminen>).

was granted by the hospital's research committee and an informed consent was obtained from all participants.

The data have been analysed using conversation analysis (CA, see, for example, Sidnell and Stivers, 2013). Within CA, a considerable body of research has been conducted on medical interaction, including whole books and edited volumes that have been published on this subject since the 1980s (see, for example, Heath, 1986; Heritage and Maynard, 2006; Peräkylä, 1995; Stivers, 2007; for an overview, see Gill and Roberts, 2013). However, most of these studies have focused on the interaction between physicians and patients (see the above list of references); this emphasis is also noted in the summary compiled by Gill and Roberts (2013). They outline three lines of medical CA research: 1) research on physician-patient interaction, 2) research on the interaction between patients and medical practitioners beyond physicians (these studies mainly include different types of therapists), and 3) research on the interaction among medical professionals (Gill and Roberts, 2013: 578–579).

Reflecting the distribution of existing research, the chapter by Gill and Roberts mainly focuses on physician-patient interaction (*ibid.* 581–589). Besides physicians, the other major medical profession is nurses, but they have been far less studied within CA. The medical CA studies that involve nurses have been conducted on topics such as maternal healthcare (Bredmar and Linell, 1999; Heritage and Sefi, 1992), risks (for instance, see Adelswärd and Sachs, 1996, 1998), and patient participation (Jones, 2009; Jones and Collins, 2007; Keel and Schoeb, 2016). Our study contributes to this line of research by focusing on the nurse's role in between the patient and the doctor. We will demonstrate how nurses orient to their differing positions through their linguistic-interactional choices: on the one hand, they display medical expertise related to assessing numeric values when talking to patients, and on the other hand, they suppress this expertise when talking to physicians. In this way, the nurses are able to handle the multiple and possibly conflicting professional tasks and identities.

3. Nurse-patient interactions

The first part of our analysis concerns the dyadic interactions between nurses and patients. During these encounters, the nurses perform various practical nursing tasks. These include changing wound dressings or administering intravenous medications, but nurses also need to communicate with their patients concerning their condition. A salient element in this communication is the talk on different numerical values (Adelswärd and Sachs, 1996: 1182). These values have either been measured by the nurse herself (such as vital signs), or they have been defined in the laboratory and subsequently reported by the nurse (such as blood test results). Nurses inform their patients about their values in at least two different professional situations. A nurse can either talk about the values in connection to a patient's ongoing care procedures, or she can mention the patient's values spontaneously, for instance to justify the medical team's decisions on the course of treatment.

A typical situation in which the values are discussed in connection to ongoing care procedures is when the nurse checks a patient's vital signs. Cardona-Morrell et al. (2016: 15) emphasise the importance of interaction in this situation because it allows patients to be more involved in the decision-making on their care. Informing patients on their vital sign values while measuring them can be compared to online commentaries made by physicians during medical consultations (Heritage and Stivers, 1999). Physicians use online commentaries to report their observations or to make assessments of what is observed while examining their patients. Similarly, doctors usually report the results to the patient and formulate some type of contextualisation of the results while measuring blood pressure (Svensson et al., 2008). The same pattern was observed for nurses who check vital signs in our data.

The first example illustrates how the nurse provides both exact numeric information to notify the patient on the measures the nurse is taking as well as qualitative assessments to describe the meaning of the numbers to the patient. The nurse (N) stands next to the patient's bed, with a thermometer in hand, and the patient (P) is lying in bed. The nurse has already informed the patient that she will measure her blood pressure, temperature and respiratory rates (blood oxygen level), and she has attached the cuff of the blood pressure meter to the patient's arm and the sensor of the pulse oximeter to her finger.

Example 1. Temperature and breathing value

01 N: *°lämpö, °

temperature

*N places the thermometer in P's ear

02 (5.0) ((after 2.0 thermometer beeps, N lifts it to look at the reading))

03 N: kolkytseit*semä nel*jä (.) se on iha ookoo,

thirty-seven four it is quite okay,

*N gazes P

*P nods

04 (5.3) ((N walks to place thermometer away))

05 N: *.hh hengitysarvo sul on sielä

.hh respiratory rate you have about

*N looks at pulse oximeter

06 yheksänkylt*neljä? sitä se on *ollukki,
ninety-four? that is how it has been,

*N nods

*N gazes P

07 P: *m,

*P nods

08 N: =>se on ihan hyvä<
=it is rather good

The nurse begins by taking the patient's temperature (lines 1–2). As soon as the nurse has checked the result herself, she informs the patient of it (line 3). She does this first by offering the exact reading, and at the same time, she gazes at the patient, who nods to receive the information (line 3). However, their interaction does not end here. The patient's temperature is slightly over 37 °C, which is commonly considered to be the average body temperature. The nurse produces an assessment, describing the temperature as “quite okay” (*ihan ookoo*, line 3). This assessment can function to reassure the patient that although the patient's temperature is slightly higher than the average, at least it is acceptable in the current situation. The nurse thus orients towards normality or positivity. This tendency has also been observed in physicians' online commentaries (Heritage and Stivers, 1999; see also Beach, 2004; Bredmar and Linell, 1999). During routine visits, the presumption is that the patient is well, and online commentaries serve to confirm this and to reassure the patient. Checking vital signs is also a routine on the ward, and the presumption is that the values are normal or good (or at least not worse than before).

At this point, the nurse checks the patient's blood oxygen level, and she relays this information to the patient immediately (lines 5–6). The nurse begins again with the exact reading of the oximeter, but then continues by comparing that value with the patient's prior results, stating that there is no significant change in the situation (line 6). By doing this, the nurse demonstrates that she is aware of the patient's medical history, which helps build trust in their nurse-patient relationship. The nurse therefore interprets the reading in terms of the patient's overall situation (Adelswärd and Sachs, 1998: 197). The nurse gazes at the patient at the end of her turn, and the patient again nods to receive the information (line 6). However, patients are not always familiar with blood oxygen values and moreover, the value in this particular situation is slightly low (the normal oxygen level is above 95%). For this reason, it might be necessary to help the patient interpret the number correctly. The nurse achieves this by making a qualitative assessment of the value, describing it as “quite good” (*ihan hyvä*, line 8).

This example reveals how the nurse utilises both numeric information and qualitative descriptions to inform the patient of her vital sign values. These numbers provide the patient with exact information on her condition and allow her to formulate her own interpretations. The nurse's assessments, on the other hand, support the patient in her interpretation. The nurse uses her professional knowledge to relate the readings both to general charts and to the patient's particular situation.

The discussion on the values in the first example was prompted by the routine activity of the nurse measuring the patient's vital signs. In other situations, nurses can mention information regarding numeric values more spontaneously. For instance, this occurs during the discharge discussions between nurses and patients. Indeed, the discharge discussion constitutes a key

moment for a nurse to inform her patient of the future course of action and for the patient to ask questions concerning any unresolved matters. Occasionally, the nurse has to justify decisions made by the medical team, and she can base her arguments on the patient's test results. In the second example, the nurse refers to the patient's blood test results to justify a care plan that the patient seems to find unexpected. This extract is from a discharge discussion, near the end of their encounter. The patient is sitting on his bed, and the nurse is standing next to the bed.

Example 2. Potassium

01 N: *onks sulla kysyttävää siitä (.)

do you have questions about the (.)

*N gaze to patient

02 prosyyrista minkä sait?

brochure that you got?

03 P: siitä ei ole [kysyttävää.

about that no [questions.

04 N: [*siit- entäs muuten?

[about tha- how about otherwise?

*N nods

05 P: ää. tuleeeko jälkikontrolli?

er. will there be a follow-up appointment?

the patient, who elaborates his question by mentioning laboratory tests as an example of a post-operative visit (line 6). When the patient approaches the end of his elaboration, the nurse repeats her negative answer. The patient subsequently confirms the nurse's answer by repeating it with falling intonation (line 8), which conveys the impression that he registers what has just been said and that he does not need further clarification (see also Thompson et al., 2015: 87–88).

Although the patient does not request further explanation, the nurse initiates a justifying turn (line 9). In other words, she treats the patient's question as revealing an underlying expectation of a follow-up appointment. As her answer is contrary to this expectation, it needs to be justified. The nurse repeats her negative answer and then pursues a discussion of the patient's present condition. Her first argument (line 9) is a general assessment of the patient's vital signs or laboratory test results; she uses the Finnish word *arvot* ('values') to refer to both in a healthcare context. The nurse does not provide exact numerical values in this case because they are not relevant here. What is essential is the fact that the patient's values exceed the critical limit. This is reflected in her linguistic formulation of the assessment. Her construction of *niin hyvät arvot* ('so good values') can serve as the first part of a compound structure that expresses consequence: *niin x että y* ('so x that y').

In this case, the numeric values are sufficiently good that a follow-up visit is not necessary. The nurse then continues by providing a concrete example of the patient's blood test results, the potassium level (lines 10–11). Firstly, she connects the new result to the one measured earlier and states that the present level is now better (*oli noussu*, 'had risen') and finally expresses that it now falls within the reference range (*normissa*, 'in the norm').

The nurse thus displays her professional competence in this example by being able to justify a medical decision made by the team: she refers to the patient's test results to explain why a follow-up visit is not necessary. Patients who understand the relationship between their condition and other factors, such as laboratory test results, are more likely to report their satisfaction with the health care system (Boyd et al., 2007). The delivery of the exact numbers is not relevant, as the nurse's professional expertise allows her to evaluate the values in relation to critical limits that affect the care decisions. She also demonstrates that she is capable of interpreting the patient's expectations and reassures him by giving a medically justified answer, which is tailored to correspond to the particular patient's situation.

4. Ward rounds

Another recurrent activity for the nurses in clinical settings is the ward round. Ward rounds differ from the dyadic situations illustrated in the previous section in that these rounds are multiparty interactions that the nurse participates in as a member of the medical team. Hill (2003: 231) defines the ward round as a "pivotal part of the daily decision-making process, involving a mixture of multiprofessional representatives concerned with the care and treatment of the patient". The ward rounds in our data are performed as a bedside consultation by a medical team that visits every patient.

Ward rounds provide an opportunity for patients to meet their doctors, and hence the interaction during the round mainly occurs between them. Weber et al. (2007: 346) describe ward rounds as "dyadic interaction between patient and physician with only minor contributions from nurses". Nonetheless, of all the members of the medical team, nurses have the closest contact with patients and they are responsible for their patients' daily activities. For the physician, the patient's medical record serves as a source of important

information, and even if it can be found on the computer, the doctors sometimes inquire about aspects such as vital signs while examining their patients. When this occurs, the nurse provides the information. In the following, we investigate the nurse's talk about the patient's values and results in two sequential environments: in a response-position after the doctor's question, and as the nurse's own choice to raise the topic.

We will begin by exploring the environment where the information delivery is more "compulsory": as a response to a doctor's question. A question is a first pair part that imposes an obligation on the recipient to perform a certain type of second pair part (see Schegloff and Sacks, 1973; Stivers, 2013). This means that when a physician inquires about patient values, the nurse is expected to provide this information. The following excerpt illustrates a case in point. Before this excerpt, the doctor asked the patient how she felt and began examining the tubes attached to the patient. The nurse (N) stands closer to the doctor (D), and the charge nurse (CN) and the registrar (R) are on the other side of the patient's bed, next to the computer.

Example 3. Fever and CRP

01 D: mites< meidän kuumeilut ja muut
how about our feverishness and the rest

02 (2.5) ((D examines P))

03 N: nyt em muista
now I don't remember

N turns her head toward computer

04 (0.2)

05 D: onks ne tasottunu=
have they stabilised

06 P: =()

07 D: °aijai (.) kumpi on kumpi (.) nii toi°
*oh-oh (.) which one is which (.) yes that*²

08 (2.0) ((D and R examining P))

09 CN: kolkyt?seittemän seittemän aamuläm[pö
thirty-seven and seven the morning temperature

10 D: [nii et se on nyt
right so it's now

11 tasottu[nu onks serppi laskussa
stabilised is the CRP going down

12 CN: [mm.

13 (2.5) ((CN bends over computer))

14 CN: (eilen) satakakskytkaheksan [()

² This turn (line 7) involves the doctor physically examining the patient and the tubes that are attached to her body.

(yesterday) hundred and twenty-eight ()

15 R: [oh: (.) on se vähän
it it is coming

16 tulossa joo °on se tulossa alaspäin°
a bit yes it's coming down

17 D: nojoo.
okay yeah

In the first, rather unspecified, question posed by the physician (line 1), the term ‘feverishness’ refers to the patient’s temperature, which is one of the vital signs measured by the nurse. The nurse responds to this question both verbally and through embodied means (line 3): she states her inability to provide an answer, and turns her head toward the computer (on the other side of the patient’s bed) where the patient’s medical record can be found. While examining the patient, the doctor modifies his broad wh-question into a polar yes-no question (line 5), inquiring about a more specific matter: the stabilisation of the patient’s temperature. The charge nurse, who is closer to the computer, responds to this question by providing the patient’s temperature (line 9). The physician continues by asking another polar question about the (possible) decrease of the infection value (CRP, line 11), and the charge nurse also answers to this question by providing the value (line 14).

Two issues need to be highlighted in this excerpt: the relationship between the question and the answer, and how the numeric information is provided. Firstly, even though the doctor formulates his questions as polar questions (lines 5 and 11), which make a confirmation or

disconfirmation relevant as the response (Stivers and Enfield, 2010: 2621), the nurse does not provide an explicit confirmation. Finnish polar questions involve the interrogative clitic particle that is attached (predominately) to the verb (in this example *on+ks*). These questions inquire about the truth of a proposition (Hakulinen et al., 2004: 1590). Finnish uses both particles and repetitions to produce positive answers to polar questions (Sorjonen, 2001). Nevertheless, in (3), the nurse does not use either alternative. Instead, she provides an answer that is tailored to another type of question – an equivalent content (‘wh’) question (that is, ‘what is the temperature’, ‘what is the CRP’). Thus, even though the doctor formulates his question to inquire about the truth of a proposition, the nurse treats his question as a Q-word question, as requesting information on a specific element that has been singled out by the question word (Stivers and Enfield, 2010: 2621). The nurse’s turn could be classified as a “transformative answer” (Stivers and Hayashi, 2010), through which she “retroactively proposes alternations to the question’s terms or agenda” (Stivers and Hayashi, 2010: 2).

The nurse’s choice of providing a transformative answer can be explained through the participants’ institutional roles, and the rights and the responsibilities connected to these roles. The doctor is the person who plans and decides on the future procedures concerning the patient, whereas the nurse’s tasks during the round predominantly involve providing information on the patient (Mattila et al., 2013: 2605). This means that even though the doctor formulates his question to inquire about the truth of a proposition, thereby giving the nurse an opportunity to execute her medical expertise, the charge nurse interprets the question in relation to the institutional roles and responsibilities of the participants. That is, instead of confirming (or disconfirming) the proposition, she provides the numeric information, thereby leaving it to the doctor, who is higher in the institutional hierarchy, to decide about the truth of the proposition. Based on her professional expertise, the charge nurse interprets the polar

question as a question to which a ‘yes’ is insufficient (see Steensig and Heinemann, 2013), and treats the question as a specification request (Steensig and Heinemann, 2013: 222–223) within the area of her own expertise: knowing about the patient’s values and providing the doctor with this information.

Secondly, it is important to note that when the charge nurse informs the doctor about the patient’s values, the nurse only provides the numeric information, without making any of the qualitative assessments that were present in examples 1 and 2. The nurse does not state that the temperature is “quite okay”, as she said to the patient (Ex. 1). Again, the nurse’s linguistic choices can be understood as reflecting her professional expertise. When talking to the patient, she not only provides the numeric value but also adds a qualitative assessment to ensure that the patient can interpret the value appropriately. When the nurse speaks to the physician, who is higher in the institutional hierarchy of medical decision-making, the nurse provides the “raw material” only, which entails the numbers, and leaves the evaluation of these numbers to the doctor. By so doing, the nurse takes into account the institutional roles of the participants, and the epistemic and deontic authority associated with these roles. Through her information-providing answers regarding the values of the patient, the charge nurse manages both the informational and relational dimensions of the consultant’s polar question in this multiprofessional context (see also Stivers, 2018: 2).

In Excerpt 3 the charge nurse thus provides the information on the patient’s values as a response to the doctor’s question. Nurses tend not to initiate turns during the round. Instead, they clearly orient to the doctor as the professional leading the round; indeed previous research on ward rounds has reported that in general, nurses experience difficulties in participating in decision-making activities, or in raising relevant patient issues during the

ward round (for example, see Manias and Street, 2001: 442, 447). Our data, however, contain instances of the nurse taking initiative to introduce information on the patient's values. For these cases, the turn often includes a qualitative assessment (in addition to numeric information). The following example illustrates this:

Example 4. Creatinine and urine

01 D: mmm. ((D looking at screen))

02 CN: hengitys vinkuu (onks sitä - -)
she's wheezing (is it - -)

03 D: mm joo.
mm yes.

04 N: mä just luin tuolta nii (.) siel lukee o- (.) et
I just read there so (.) it says s- (.)

05 on vinkunu aikasemminki mut mä en oo kuullu häntä
she's been wheezing before as well but I haven't heard her

06 aikasemmin nii mä en tie•dä•
before so I don't know

07 CN: (on plussilla) tuhatkuussataa mut >toisaalta<
(it is on the plus) 1600 but >on the other hand<

08 (kretsut) on #korkeet# (0.4) #ne >on ollu< eilen
(creatinine) is high (0.4) it >has been< yesterday

09 sata<kaheksan># tai no >#korkeet ja korkeet#
hundred-eight well or >high and high

10 mutta [siis< noususuuntaset .hh
but I mean< rising

11 D: [°ne on ny noussu°
it's risen now

12 CN: pissaahan oli eilen [tullu huonos]ti
the urine production was poor yesterday

13 CN: >seittemänsataaviiskymment< nyt tuli aamusta
seven-hundred-fifty now in the morning it was

14 jo neljäsataa,
already four-hundred

15 N: °joo°
yes

16 (0.2) ((L scrolling the screen))

17 CN: >mut et< ↑vähä on,
>but like< to some extent,

18 (.)

19 D: #neste laskenu#.

the fluid has gone down.

At the beginning of the round, the doctor has talked with the patient by facing her at the end of her bed, but prior to this segment, he has taken a step back and turned toward the computer, scrolling through the patient's information on the screen (line 1). Given that a somewhat stagnant phase has emerged in that the doctor is clearly focusing on the information on the screen rather than orienting to the patient, the charge nurse takes the initiative. She begins by making an observation concerning the patient's breathing (line 2) and continues by mentioning the measurements of the patient's values (from line 7 onward). Thus, the charge nurse takes the initiative to provide information on the patient's values without a request to do so by the doctor. It is evident, nonetheless, that the charge nurse, who is standing behind the doctor at some distance from the patient, provides this information to the medical team, not to the patient. The charge nurse speaks in a soft voice, shifting her gaze between the nurse and the doctor (lines 7–12).

In contrast to the previous example, when the charge nurse talks about the patient's values this time, she uses qualitative assessments. She begins her turn (line 7) by mentioning a numeric value ('1600')³, but after that, she evaluates the creatinine value as being high (line 8). However, subsequent to this qualitative assessment, she provides the exact numeric information ('hundred-eight', line 9), and this makes explicit what she bases her evaluation on. The same pattern emerges when the charge nurse mentions the next value, the amount of

³ It is unclear to us what this number refers to. The charge nurse points to the screen with a pen while stating the number.

urine. Firstly, she evaluates it qualitatively ('it was poor', line 12), after which she immediately specifies the exact numeric information ('seven-hundred-fifty', line 13). Thus, although the charge nurse produces her own evaluations of the patient's creatinine value and amount of urine, she nevertheless provides the doctor with the numeric information, so that the doctor can draw conclusions on the patient's health.

Furthermore, it is interesting that after her first qualitative assessment, the charge nurse in fact initiates a self-repair concerning this evaluation. By using the disjunctive particle *tai* ('or', line 9), she introduces a new formulation (see Laakso and Sorjonen, 2005: 257), and even explicitly questions her previous assessment by using a reduplicated construction ('high and high', see Lindström and Linell, 2007), before replacing it by a new version ('rising'). The self-repair may be related to the fact that the doctor does not provide confirmations or (aligning) second assessments after the nurse's qualitative assessment; it is only after the nurse has begun her repair turn that the doctor responds by collaboratively completing her utterance ('it's gone up', line 11).

The nurse's qualitative assessments appear to be her means of entering the conversation. Given that the doctor is involved in scrolling through and looking at the patient's information on the screen, the progress of the round is temporarily at a standstill. The participation framework (Goodwin and Goodwin, 2004) has changed because the dyadic conversation between the doctor and the patient (before the extract) is fading out. The charge nurse uses this opportunity to join the conversation.

A feature shared by both examples 3 and 4 is that the charge nurse has provided the exact numeric information when discussing the patient's values with the doctor. The next example illustrates a deviant case, where the nurse only provides a qualitative assessment, without backing it up with numbers.

Example 5. Blood pressure

01 (3.0) ((R and D by computer, N retrieves something from the closet))

02 R: °niin. (.) tuol on noi [*viis(-)°

yes there are th[ose five

**D leaning closer to the screen*

03 D: [*viis #ööö#,

[five ehh

**moves his finger on the screen while reading*

04 (5.7)

05 N: täs on ollu verenpaineet ollu aika- tosi koholla hänellä.=

it's been his blood pressure has been quite- really high.=

06 D: =ONKS [HÄNELLÄ- K- ONKS TEILLÄ KOTONA- (.)KOTONA TUOTA (2.1)

HAS [HE- HAVE YOU GOT AT HOME- (.) AT HOME ERM (2.1)

07 N: [°tässä.°

[°lately/here.°

08 D: *ÖÖ VERENPAINELÄÄKETTÄ OLLU KÄYTÖSSÄ,

EH BLOOD PRESSURE MEDICINE IN USE

**D moves closer to P's bed, gaze at P*

09 P: ei ole,

no I haven't

10 N: ei o mitään lääkityksiä ei [#vissiin oo#

there's no medication no [#apparently not#

11 D: [*joo kuis korkea se on ollu.

[yes how high has it been

**D gaze at N*

12 N: ootas,

wait

13 (0.5) ((N takes off her gloves and takes a paper out of her pocket))

14 N: mitäs me tän aamulla <oli ollu sellasta:> (.) satakasineljä

what did we this morning <it had been like:> (.) 184

15 sata[kolmetoista

113

16 P: [↓aha se oli sit niin paljo aamulla.

[oh it was so much in the morning

17 D: no vois tietysti mitata puolen tunnin välein

well you could of course measure it every half hour

18 sitä kannattaa vähä==

it's worthwhile-

19 N: =ei [se niin usein se on varmaa ker[RAN VUOR-
=it'[s not that often it's probably[once in a da-

20 D: [kattoo [EIKU MÄ TARKOTAN
[to check a bit [NO BUT I MEAN

21 että sitte jos saatte yhden kerran tommosen arvon
in case you one time get that kind of result

22 ni ottakaa puolen tunnin päästä [uuestaan koska
then take it again in half an[hour because

23 N: [joo,
[yes

24 D: siinä voi olla tällöinen mittausheitto
it can be this kind of measurement effect

This excerpt resembles the previous one in that a stagnant phase has emerged: the doctor and the registrar have gathered around the computer, focusing their attention on the information on the screen (lines 1–4). Before this extract, the doctor has talked with the patient and concluded that the patient should be moved to another ward. The doctor subsequently walks from the patient's bed toward the computer. As there is a standstill in the conversational progress of the round, the nurse joins the conversation by initiating a turn concerning the patient's blood pressure (line 5). Thus, the nurse enters the conversation in the same manner as the charge nurse in the previous example, except that in this case, she only provides a

qualitative assessment of the vital sign without mentioning any numeric values. It is important to note that in her assessment, the nurse self-repairs the qualification from a milder ('quite high') to a more extreme version ('really high' in line 5). This can be understood as highlighting the "doctorability" of the issue, that is, as presenting the issue as worthy of medical attention (for example, see Heritage, 2009).

It is interesting that the doctor asks a question regarding the information that was not present in the nurse's turn, the numeric value of the vital sign (line 11). The nurse provides the numeric information (lines 14–15), which evokes an aligning qualitative evaluation from the patient ('it was so much', line 16). The doctor does not evaluate the numbers. Instead, she offers advice on how to follow the blood pressure (lines 17–18 and 20). When the nurse begins to clarify how frequently they have measured the values, the doctor produces a third-position repair (Schegloff, 1992), specifying her advice (lines 20–22 and 24). The doctor thus avoids evaluating the numbers the nurse provided; she refers to the result with the unspecified proadjective *tommosen* 'that kind of' (line 21). Instead, the doctor emphasises that a valid qualitative assessment cannot be provided without more measurements ('it can be a measurement effect').⁴

To summarise, in this case, where the nurse only provides a qualitative assessment of the patient's values without providing the corresponding numbers, the doctor does not align with the nurse's evaluation. Firstly, she asks about the "missing" information, that is, the

⁴ It is interesting that when talking about the values, the nurse (and the doctor) use the present perfect tense (*on ollu* '[blood pressure] has been [high]'). This typically indicates continuity; that the action has started previously but has relevance for the speech time (Hakulinen et al., 2004: 1461). Thus, the verb tense in the nurse's turn (line 5) could be interpreted as presenting an evaluation on the basis of several measurements that have happened before the speech time. As a response to the doctor's question ('how high has it been'), the nurse provides the most recent measurement (line 14-15), using the past perfect that indicates reported speech (see Hakulinen et al., 2004: 1467). Despite the tense used by the nurse, the doctor specifically advises her to take more measurements and not to rely only on one measurement. – We are grateful to the anonymous reviewer for this observation.

numbers (line 11), and she subsequently verbalises the invalidity to link those numbers to a specific qualitative assessment (line 24). As a consequence, the doctor can be interpreted as enacting her epistemic medical authority: instead of accepting the nurse's assessment, she defines the meaning of the numbers in a different manner.

Conclusion

This paper has investigated a professional practice – talking about a patient's test results, which is a typical activity for nurses who work in a hospital. Nurses need to be able to transfer information on vital signs measurements and test results adequately to the different groups of recipients they are regularly in contact with, most notably the patients themselves and the doctors. Designing their talk specifically to the recipient and the situation is a part of a nurse's professional competence and constitutes one means of “doing being” a professional nurse. We have discussed when and how nurses talk about test results, and have demonstrated how nurses make linguistic-interactional choices to construct their professional identity involving both care and medical expertise.

The nurses need to provide information concerning the patient's test results particularly when such information is interactionally projected. This projection can be created by a prototypical first pair part, such as the doctor's question regarding the result. Also multimodal activities, such as the physical measurements of the vital signs, project an expectation to verbalise the results (similarly to doctors' online commenting, see Heritage and Stivers, 1999). In addition to the projected cases, nurses can take the initiative to mention the test results. During ward rounds, the nurses exploit the stagnant phases when the doctor is not oriented to the patient, to inform the doctor about pertinent results, and thereby provide their contribution to the medical decision-making process. In other words, by mentioning the

results, nurses orient to the medical side of their profession. In contrast, when nurses engage in dyadic conversation with their patients, referring to results is one means to anticipate and meet the (potential) concerns that the patients have about their health and recovery. In these cases, talk about the results is more clearly connected to the dimension of care in the nurse's profession.

How then is the talk about the measurements formulated? The tendencies in the data can be illustrated through the following table:

Table 1. Nurses' turns about the patient's test results.

	With a patient	With a doctor
Nurses' talk about test results is projected	numeric + qualitative	numeric
Nurse initiates talk about test results	qualitative	qualitative + numeric

It is important to notice that when nurses discuss results with their patients, the recurrent element is a qualitative assessment, whereas when they talk with doctors, the typical turn involves numeric information. This is particularly striking when the doctor has posed a polar question (projecting a confirmation or disconfirmation), and the nurse nevertheless provides the numeric information (Ex. 3). By providing numbers to the doctor, rather than evaluating them, the nurse orients to the doctor as possessing the deontic authority, that is, the legitimate power to determine the course of future action concerning the patient (Stevanovic, 2013).

While nurses may contribute to the medical decision-making process by providing relevant patient information, they leave it to the doctor to evaluate this information and thereby construct the doctor as the final medical authority. In contrast, when talking with the patients, the nurses typically provide the qualitative evaluations and thus ensure that the patients understand what the numbers mean to them. This can be interpreted as supporting the nurse-patient relationship.

Nurses working in a hospital need to adapt to various situations and roles. Different situations also require different ways of interacting and using language, which may be challenging. Previous research has suggested that nurses focus on physical care and interact in “a superficial way” (see Gordon et al., 2009: 551). Moreover, earlier research has reported on the difficulties that nurses experience when they participate in ward round discussions (Manias and Street, 2001). In order to support professional language use, more detailed information is required on the interactional reality of nurses’ work. This study offers insight into one professional activity, and demonstrates how its verbal formulation depends on the activity the nurses are engaged in and on the recipient of their talk.

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